

DRINKING VESSEL

FIELD OF INVENTION

The present invention relates to devices such as cups, mugs, tumblers and the like. More particularly, the present invention relates to a beverage container that can be evacuated conventionally by tipping the container and pouring its contents from an opening in the side or top of the container or by gravity by providing a hole through a bottom of the container and a tube in fluid communication with the hole such that the contents of the container can pass by gravity feed from the container, through the hole and out through the tube.

BACKGROUND OF INVENTION

Several proposals have previously been made for beverage containers that can be evacuated using gravity. For example, U.S. Patent No. 162,640 to Fowler discloses a drinking-cup for invalids including a bowl, a hollow stem in fluid communication with the bowl and a base connected with the stem opposite the bowl. An inflexible fluid-conveying tube is screwed into the hollow stem and oriented so that the free end of the tube is positioned below a plane formed by the base. To prevent the flow of fluid from the bowl through the stem, a complex valve actuator and valve set are positioned within the stem.

A further example, U.S. Patent No. 5,199,633 to Jantzen, discloses a drinking aid including a cylindrical container having an open top, a closed bottom, an annular wall and an aperture formed through the wall in immediate adjacency to the closed bottom. An elongate tube having an articulated portion intermediate the length thereof is provided in penetration of the aperture, with a fluid-sealing, interference fit.

OBJECTS AND SUMMARY OF INVENTION

A primary object of the invention is to provide a beverage container that can be evacuated either conventionally or by gravity.

A further primary object of the invention is to provide a beverage container including an open top, a closed bottom, a hole through the closed bottom, a conduit in fluid communication with the hole, a tube attached in fluid communication with the conduit, means of securing the tube adjacent to the beverage container and means of preventing a fluid from flowing through the tube.

A further primary object of the invention is to provide a beverage container including an open top, a closed bottom, a hole through the closed bottom, and a substantially L-shaped conduit in fluid communication with the hole wherein the tube is attached to a free end of the L-shaped conduit and wherein the L-shaped conduit forms an angle that is adjustable or not.

Another object of the invention is to provide a beverage container that includes an open top, a closed bottom having an aperture located about a central portion thereof, a wall extending between the open top and closed bottom, a conduit in fluid communication with the aperture, a tube connected with the conduit, a handle connected with the wall, a rim for maintaining the container upright on a surface, an opening in the rim adapted to receive the tube, a clasp connected with the wall and a clamp or a plug for preventing fluid flow through the tube.

The objects of the invention are accomplished by providing a beverage container having an opening, a closed bottom, a hole formed completely through the closed bottom and a tube or the like in fluid communication with the hole. The container can be of any

shape and size and constructed of any material. Preferably, the container is constructed of plastic or glass and configured in the form of a mug having a handle.

The opening can be in the form of an open top, for example, the open top of a mug or a cup, or it can be an aperture formed within a side wall of the container. It is preferred that size of the opening be large enough to allow the contents of the container to freely flow by gravity through the hole. If a slower gravity flow is desired, a smaller opening and/or hole can be provided.

The tube is provided in order to direct the flow of flowable material from the container to a desired location such as a user's mouth. Preferably, the tube is flexible, although an inflexible tube can be used. The tube is arranged in fluid communication with the hole in any number of ways. For example, the tube can be screwed directly into the hole or inserted into the hole with a fluid-sealing, interference fit, or it can be formed integrally with the closed bottom or bonded to it. Preferably, a conduit having an end adapted to receive the tube is disposed in fluid communication between the hole and tube. The conduit can be connected with the closed bottom or hole in any manner known in the art. The conduit can be straight or curved or extend perpendicularly or at an angle from the closed bottom or hole. Further, the conduit can be adjustable, including a flexible region intermediate its length such as an articulated region or movable joint. Preferably, the conduit is L-shaped having a tapered, free-end adapted to receive the tube in a fluid communicating fashion.

To allow the container to rest upright on a surface means are provided which support the container in an upright position and provide a passageway from underneath the container. This can be accomplished by including a conventional rim extending downward

from the circumference of the closed bottom a sufficient distance to compensate for the tube and/or conduit, the rim having a cut out which forms a passageway through which the tube or conduit can protrude.

When it is desired to drink or pour from the opening of the container by conventional means, rather than by gravity feed through the hole and tube, the tube is flexed upward through the cut out in the rim and secured adjacent to or against the container using a securing means. The securing means can be connected directly or indirectly to the container and include any means capable of securing the tube in place, for example, a clasp, a clip, an adhesive, a loop, a hook or the like. To prevent the flowable material from flowing through tube when it is tipped, the tube can be doubled over and placed in the securing means thus sealing the tube, or a plug or clamp capable of sealing the tube can be provided. The plug and clamp can be connected to or disconnected from the container or directly supported by the tube alone. Preferably, the securing means and plug or clamp are aligned and connected with the container.

When it is desired to pour or drink from the container using a gravity feed, the tube is disengaged from the securing means, the container lifted and the tube essentially straightened, the free end of the hose positioned about the desired location and the means used to prevent flow through the tube removed. Immediately, the flowable material within the container will quickly flow by gravity from the container, through the hole and out through the tube to the desired location.

Further objects of this invention, as well as the novel features thereof, will become more apparent by reference to the following description, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is side plan view of a preferred embodiment of the present invention.

FIG. 2 is a sectional view along line 2-2 of the present invention depicted in FIG. 1.

FIG. 3 is a perspective view of a bottom of a preferred embodiment of the present invention.

DETAILED DESCRIPTION AND PRESENTLY PREFERRED EMBODIMENTS

As shown in FIGS. 1 and 2, a preferred embodiment of the improved beverage container includes a mug 10 of cylindrical form, having an open top 12, a closed bottom 14, an annular wall 16, a hole 18 formed completely through a central portion of closed bottom 14, a handle 20 and a lower rim 22. Open top 12, closed bottom 14 and annular wall 16 define a reservoir 24 for containing a fluid to be consumed either conventionally by tipping mug 10 to a side or by gravity feed through hole 18 in closed bottom 14.

In order to direct the fluid from reservoir 24 through hole 18 and ultimately to the mouth of a user, closed bottom 14 is slanted downward toward hole 18 such that hole 18 is found at the apex of closed bottom 18. In addition, hole 18 includes means of connecting reservoir 24 with a member or members capable of easily directing the fluid to a desired location by gravity alone. More particularly, hole 18 includes a threaded portion for receiving a threaded end of a first arm 26 of an inflexible, essentially L-shaped conduit 28. Conduit 28, in turn, includes a second arm 30 having a free end 32 opposite the threaded end of first arm 26 which is adapted to receive a flexible tube 34 by fluid sealing, interference fit. Tube 34 extends from its connection with free end 32 through a cut out or opening 36 in lower rim 22 and, when bent upward, adjacent to annular wall 16. Opening

36 allows mug 10 to rest upright on a surface when tube 34 is extended out from underneath the footprint of closed bottom 14.

When mug 10 is to be used in the conventional manner described above, tube 34 is secured adjacent to annular wall 16 by a clasp 38 connected with annular wall 16. Clasp 38 includes arms 40 as shown in FIG. 1 which can be spread apart by pressing tube 34 between arms 40. Arms 40 prevent tube 34 from dislodging from clasp 38 during the normal course of drinking from mug 10. In order to prevent a fluid from flowing through tube 34, a plug 42 is provided. Plug 42 is connected with annular wall 16 by a tether 44 which is connected to annular wall 16 by a base 46 having an aperture therethrough. Plug 42 is adapted to fit within tube 34 and prevent the movement of the fluid out of tube 34. Plug 42 is easily disengaged from tube 34 when gravity fed flow through tube 34 is desired.

Another preferred embodiment of the improved container is shown in Fig. 3, where like features share like numbering with the embodiment illustrated in Figs. 1 and 2. The mug 48 illustrated at Fig. 3, includes a flexible conduit 50 having an articulated region 52 intermediate the length thereof. Flexible conduit 50 is secured in fluid communication with hole 18 and tube 34 in the same manner as L-shaped conduit 28 described above.

When it is desired to pour or drink from mug 10 using a gravity feed, tube 34 is disengaged from clasp 38, mug 10 lifted and tube 34 essentially straightened downward. A free end of hose 34 is next positioned about the desired location and plug 42 removed from tube 34. Immediately, the fluid within reservoir 24 will flow by gravity from mug 10, through hole 18 and out through tube 34 to the desired location.

While I have described my invention in connection with a specific embodiment thereof, it is to be clearly understood that this is done only by way of example, and not as a limitation to the scope of my invention, as set forth in the objects thereof and in the appended claims.